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How economy becomes situated in local place; understanding the location of economy from the perspective of urban social ecology

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Abstract
One of the pressing issues in today discussion about globalization and urban development is on the role of local space in 'situating' global economy. That every bit of 'local' economic activities has become subsumed into 'the global' is something we know already, but what is the role of local spatial conditions in 'translating' (following the definition in Law, 2003) the global economy to site and by doing so making firms able to operate effectively at the global scale while sitting in a particularly local space? This explores the relation between urban form and economy by taking Amsterdam as case study. It shows consistent relationship between topological spatiality and distribution and organization of economic functions –a premise which partly developed out of Space Syntax. This paper tries to develop instrument for urban form analysis by recasting the issue of economy from spatial/urban perspectives, rather than by putting forward economic arguments. This paper starts with a brief theoretical framework and then concentrating on the analysis of case study using a series of spatial and temporal mapping. As demonstration, an analysis on a neighbourhood in Amsterdam is presented as an attempt to recast the issue of economic spaces by putting forth an ecological perspective.

1 Introduction

Where economy becomes located is considered classic if not one of the foundations of urban and regional studies. After Von Thünen's seminal study in 1826 which has given birth to classical location theory, there has been since then mushrooming theories and perspectives on economic location that will be quickly revealed when one scanning through available literatures. Yet, this does not mean that there is a single unitary perspective explaining the nature and location of economy in city. A classic example, our past understanding of urban and economic development has been distorted by the view of 'agricultural development first, city later', which has been repudiated in Jacobs (1961). A closer example is Von Thünen's seminal model of concentric land use which obviously has made several rebirth and adapted to explain the formation of central business district (e.g. Alonso, 1964) despite it is highly reductive since it exclusively takes economic efficiency into account. Economic efficiency might still able to explain parts of the economy today, like the relocation of production units and plants to lands where labours are cheaper, but fail to explain the revival of economy in post-industrial cities.

Also, is has failed to deal with the effect of time-space compression and global mobility that we face today. We are left today with crisis of explanation dealing with 'flux' of economy which makes economy theoretically unlocalisable or at least parts of the economy are no longer straightforwardly following simple spatial-temporal logic as in the past.

For the last couple of years there have been some redirection of interest to new economic geographies in response to the intervention made by Amin & Thrift (2000) and a more expanded one by Peck and Willis (2001). These new economic geographies have refigured the 'economic' by taking the 'cultural', 'social' and 'political' into consideration Much of what have been studied and reported so far are focused on *why* economic geographers need to refigure economy and the way it becomes located, or at least to explain economic location from a rather different basis than what neo-classical theories did. Unfortunately, as Yeung (2003) rightly put it, the burgeoning literatures concerning these new kinds of economic geography are rarely accompanied by critical examination and insights on methodological issues necessary for those practicing the research which in its turn helps extending our theoretical conception. In that paper Yeung has indeed come with some criticisms on available methodologies and made calls to forge a more solid one.

Throughout this paper I endeavour to recast the question of economic location in relation to urban form. My initial position as urban morphologist made me keen to take analysis on urban form, in particular to start from the perspective that sees urban form providing the structuration of our life (including economy), instead of using economy to explain the form of city as we did in the past. This paper attempts to show a consistent relationship between a topological spatiality and the distribution and organization of functions (here economic programmes) in cities –partly following the premise of 'space-syntax' (see e.g. Hilier, 1996b).

Rather than starting the discussion from a theoretical perspective, this paper is inclined directly to case study. The reason is not that I tend to dismiss theoretical discussion, instead I hope to weave a theory using a different basis which I believe more 'fleshy' and closer to the reality of everyday life. Keeping this in mind, I conducted a small ethnographic study on economic activities in an urban neighbourhood in Amsterdam. My intention is neither to display the full array of possibilities provided by ethnography to unravel the inextricably complex socio-spatial construction of economy nor to claim that such approach has the privilege of doing so. Instead, I consider this study as mapping exercise which attempts to begin to understand the intertwining of our social-economical-spatial life by means of visualization and above all to suggest that the material form of city has certain potentials that might provide organization to our social and economic life. It is clear that without any form of organization life is too fluid, wild and ungraspable. If in the past we thought that abstract systems like 'societies' had been giving some ordering to our life, today we need to re-learn and to acknowledge more properly the power of [material] city in giving systematic ordering to our urban-social and economic life (Latour, 1988).

2 Extending the concept of network

It becomes mandatory to mention 'network' when speaking about almost everything today and without exception to economy, which can be seen from the proliferating publications around the issue of 'global economic network' and 'economic of flows'. The fanciness of the term is not without alarming concern. As Latour (2003) said, there is a great danger of using technical metaphor slightly ahead of everyone's common use as today everyone believes they understand what the 'network' is. Therefore I see the urgency to provide a proper clarification before taking a step further. The 'network' concerned in this paper comes from actor-network theory, which should not be confused with the opposite binary between (social) structure and (human) agency (e.g. Giddens). The first shift is in the word 'actor', which makes no distinction between human and non-humans. Actors are simply 'entities that do things' (Callon,1987), and that, "[other] distinctions are less interesting than the complete chain along

which competences and actions are distributed" (Latour, 1992). The second shift, is the definition of network. Network is not the structure that enable things to happen, as in technical usages, but network is the flow or the work itself (see e.g. Latour, 2003, 2005). Following Callon (1987), the definition of network, is "…a group of unspecified relationships among entities of which the nature itself is undetermined." The third shift, unlike structure-agency dualism, actor-network are mutually constitutive. Not only dependent to each other, actor and network constantly redefine each other and linked to another for certain period of time. It should be made clear also that 'network' as we concern here is the way we put attention to the connecting up, assembling, centring, and distributing of all manner of things in space, not particular description of things (Murdoch, 1998).

Now, I would like to start by considering a very simple concept of economic network. Suppose we consider activity as node holding function as interface between 'assembly networks' (i.e. the process of gathering, inflow, all necessary means converging to every single node) and 'distribution networks' (i.e. the process diverging, outflow, from every single node), then visualizing how these networks centre and emerge from every single activity should positively allow us to capture the linkages among different economies and explain the way economy become situated together in particular site. For example, to capture the topology of connections among nodes and the effect of physical closeness in increasing the number of contacts among nodes. Here, the node can be either a shop, firm, or person, but also all kinds of public facilities (e.g. park, museum, square) and simple objects, like a bench.

Visualising an object or compound of objects (an economic function, e.g. a shop, is an assemblage of objects that not necessarily harmonious fit to each other but gathered to accomplish a particular aim) as a technological device invented to smooth the process of exchange implies that we need to consider the gathering and redistribution of human and non-human elements equally. Realising that such effort tremendously complex and painstakingly accomplishable and being aware of my limited resources, I am forced to narrow down to include only 'supply' and 'sales' network. By 'supply' I means where goods and services come from and by 'sales' where customers come from.

It is clear that these two networks are not necessarily symmetrical to each other in terms of contingency and between nodes individually. For example, someone wants to buy certain product from a shop does not necessarily know in detail about its supply network (which includes not only the making and dispatching of goods but also its organisation and extensive financial systems which allows smooth transaction process). Also, he is not necessarily aware that two shops sitting next to each other offering similar goods and services at a comparable price might actually link to completely different chains of supply. The supply-network asymmetry is, however, only part of the story. In the other part, these shops are tied together by the network of consumption. Not only that they might be targeting on similar group of customers, these shop as the interfaces between the products and those looking for those products need to be made visible and easily located by potential customer.

Having come to this, I would like to make a turn in my argument by suggesting that economy becomes located through the way its network made operative and visible. Arriving at this point, the readers might ask 'why visibility?' or 'what does visibility have to do with economy?' Throughout the next paragraphs I will try to stipulate my arguments though a small experiment by taking Amsterdam as case study.

3 Location as spatial network question

I suggested somewhere already that economy is situated through the way its operative network is made effective. Since 'network' covers everything today, from social network to (tele)communication to law and politics, I need to clarify that in this essay I primarily concentrate on spatial (physical) network. Without undermining the efficacy of non-physical networks in situating economy, in this essay I intend to push forward the idea of material (physical) form of city as holding active role in situating

social processes and enabling the operation of economic networks by deriving from Hillier (1996) and Read (2005) and take a theoretical position that stands in opposite to conventional theories which consider space and material city simply as being passive excesses of the active socio-economic processes. In this light, material city gives organisation to economic processes by making different parts of space appear to us in *layers* rather than by exposing them simultaneously and making all spaces equally visible. I propose, thus, that, first, there is topography of visibility and, second, that this topography of visibility might impose on the way economic activities are distributed on urban surface.

To reason my motivation, I would like to start by referring to the study by Bruyns (2007). Throughout his study, which intents to picture the form of contemporary city, Bruyns draws a map of the distribution of commercial and public functions in Amsterdam. Using colour coding, he arrange them according to 'where do their visitors come from' (Fig. 1) instead of using conventional organisation like types of activity. For example, 'red' is used to represent large scales attractiveness, e.g. 'global' (i.e. functions mostly visited by tourists and foreigners, no matter it is a café or an airport) and 'orange' for 'metropolitan' (covering all functions attracting visitors coming from Amsterdam and other Dutch cities). This map, reveals not only spatial behaviours of different groups of people in Amsterdam, e.g. tourists rarely quit the high streets, but also that each group has in some way established its presence in different spaces and times of the city.

In my opinion the findings made in Bruyns puts forth two important indications about the working of city. First, that city allows and sustains ecology of presence (Amin & Thrift, 2002) by accommodating seemingly unrelated events to emerge in different places rather than being a melting-pot of heterogeneities as in Wirth's view of urban ecology (1938). Second, more importantly, the distribution pattern of scale-related functions shown in the map seems to suggest a quasi self-organisation than an order that comes from imposing a set of rules. For instance, if we are to extract functions marked 'red' and 'orange', indicating high-scale attractiveness, we will find that their locations follow a rather consistent pattern; a series of lines radiating from the historical centre which connect some spots where larger chunks of activities clustered. Although the pattern contains ruptures as some lines are disjointed, we will not fail to see that these lines are more than sufficient to allow us to roughly draw the form of the city, a skeleton that gives form to the fleshy parts of animal's body.

If we are to understand the form of the city and the location of activities, I can imagine that 'space syntax' will be somewhere near the top of our piles of models and techniques to get a grasp on the issue. Directing their investigation on the relation between the form of the city and the pattern of activities, studies in urban morphology using space syntax, conceived in Hillier (1996b) and Hillier & Hanson (1984) and tested among others by Read (1997) particularly in the case of Dutch cities, reveal high correlations between the skeletal urban form and location of activities. The technique starts by modelling the skeleton of urban forms by taking all physical movement networks and then calculating the model using the notion of topological distance (i.e. analysing the way segments in the 'network of spaces' connected to each other in the whole system). The result, a map showing topological hierarchy of space in particular system (i.e. a city), is then interpreted by comparing it to other data like the number of physical movements and location of activities (e.g. shops and gathering places). Based on their empirical findings, studies using space-syntax approach have led to a controversial but now widely accepted thesis which states that topological configuration of space (the arrangement of voids and non-voids or simply the 'form' of material city) has effect on natural distribution of socio-economic activities (the 'content' taking place in the form). Their findings have put new shed of light on the issue of 'form' and 'content', resulting in the refutation of traditional views which saw material urban form as subservient to social and economic processes as e.g. in Mumford (1939).

The fitness between the 'content' and 'form' is worth some further thoughts. Part of the explanation about such fitness which comes to light from space-syntax is that urban form has effect on the distribution of natural movements in city and consequently the pattern of movement plays role in the distribution of urban functions. Or in other words, it is the distribution of movement that locates functions, including economic functions, by attracting movement-seeking functions (e.g. shops) to

spaces along which sheer number of natural movements are conveyed, and send all less-movement-seeking functions to the rest. This results in what Hillier claims as 'cities as movement economies' (1996a). In the similar vein of argument, I endeavour in this paper to extend the thesis of urban form as the scaffolding of social-economic processes by suggesting that the way 'forms' made visible to moving-bodies in city appertain to the location of 'contents' –we are able to organise things in space because they made themselves visible in the first place. To argue for this proposition, I conveyed a small experiment, taking Amsterdam as case study, about the way visibility is physically distributed in city and then linking the distribution of visibility to the way we move in city and its effect on distribution of functions which will be explained in the next paragraph.

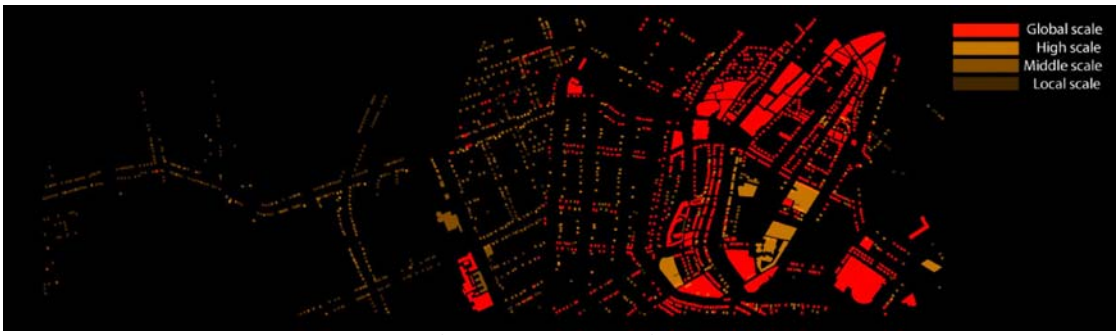

Figure 1. Where do customers come from? – the geography of economy in Amsterdam (Bruyns, 2007)

4 Visibility matters; from network to visibility

Let us start with a simple experiment. If we want to understand how global functions (according to the definition made by Bruyns, of course) get tucked in local space, then we need to ask how they are made visible enough in order to attract tourists getting there. Indeed, a question like this has the danger of becoming too wide to research if not leading to a biased answer, but demonstrating how the global can physically come to local is not that difficult as without exception the global still needs to be locally visible in order to be physically localisable; without which the global simply does not exist. Suppose we are strangers coming to Amsterdam. Then, let us try to explore how we see the city, or more pertinently, in which sequence the spaces of the city are made visible to us (As a matter of fact, some spaces of Amsterdam are invisible even to those living there for years). To do so, among the first questions we need to answer would be: at which points we, the global, can enter the city? This is not difficult to answer as there are only two ways to get to Amsterdam: by land-vehicle, which can be by cars or buses, bikes, or trams, or on foot; no exception made for those travelling by train, ship, or airplane. Assuming the highway (say, we are coming by private or semi-private vehicles) and the trainstation (in case we use other means of transport, as in Amsterdam the trainstation functions almost perfectly as node collecting all kinds of public transport) as points of entry to the city, all we need to do next is to try to replicate the way visibility breaches from and beyond them. As an example, a crude yet suggestive model reanimating the opening-process from the trainstation is drawn (Fig. 2a). This process is depicted by gradually reducing the opacity of the lines, which represent spaces, to indicate the increase number of steps necessarily made by tourists to reach them. A totally opaque line in the map indicates, for example, direct visibility (and access) from the station, and so on.

If we try to read what does the distribution of visibility mean by superimposing the map to the distribution of functions shown earlier in Fig.1, we can immediately see in Fig. 2a that functions categorised as global are rarely found beyond the spaces that require more than three-steps of visibility from the trainstation. So, for tourists, 'the city' starts to diminish beyond these spaces. But if we accordingly take functions in the second order of scale, 'the metropolitan' –by adding lines of the

major arterial roads to the previous visibility map– we will find them gradually start taking up the space (Fig. 2b) but still retain to a certain structuring and possibly stop after the next three-step. This simple exercise has demonstrated that distribution of visibility and functions show a strong correlation. Spaces topologically closest to the aperture have higher tendency to be discovered and, in effect to that, taken by functions with larger scale of reach. As the experiment suggests, the reason that visibility effects in the emergence of global functions in certain (not in all) places is because 'location' is a form -rather than process- driven mechanism.

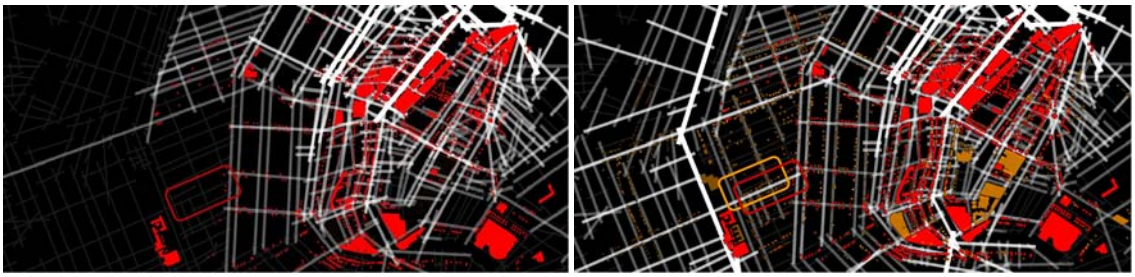

Figure 2. Spatial visibility from the (a) global scale (b) metropolitan scale. Location of Elandsgracht is highlighted

In the example above, it is demonstrated already how the form of the city scaffolds the assembling of the global in local spaces. However, since today visibility is extended through physical and virtual means, such as the Internet, to explore the different agencies distributing visibility belongs to the task of this study. Provided that functions/places are made visible to the global through physical access and webs of information (e.g. directory services, the Internet), let us try to compare the structure of informational and spatial visibility in order to generate deeper understanding about the nature between the two kinds of forms, the real-virtual and the real-physical, in locating urban functions (the contents) in city. How the city is made visible in the Internet? Or a more pertinent question would be, does the real-virtual world present a structure of visibility as we encountered in real-physical one? I attempt to answer this question by taking another experiment. Using Internet search engine, the hits made by entering the name of every street in Amsterdam is counted and plotted on the map. The result (Fig. 3) shows a striking, but not totally surprising, correlation between the virtual and physical visibility. Damrak, physically located just right in front of the train station and by far packed with tourist compared to other streets, reaches highest hits. The map demonstrates that the number of hits, which I take it as indicator of virtual visibility, decreases gradually as we move from the most physically visible space to those less visible. We shall not fail to see structural resemblance between the series of maps in Fig 1, 2 (a and b) and 3.

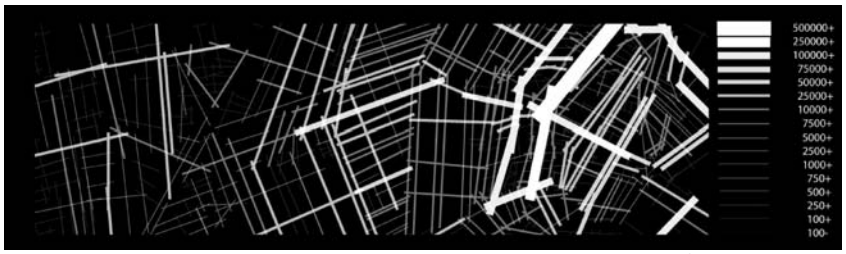

Figure 3. The topography virtual visibility showing the number of hits

Although sheer number of hits in some streets in Fig 3 might simply reflect large number of businesses and other public functions located in the streets and not directly shows that technologically mediated visibility has same effect as the visibility conveyed through material urban form, the result suggests that it is unjust to think that the pervasiveness of technology will equalized all spaces, expunging advantages rendered by material urban form and by doing so making location of economy

random. New technologies have certainly made us need to think more critically on spatial correlation of centrality as Sassen (2004) has noted. Yet, today we are witnessing newer forms of centralities, the technologically mediated centralities, are to emerge co-existentially with older forms of centralities, not being the substitute of the latter. The fleeting away of economy to edge-city urbanisation might be true for some activities as far as technology allows, but material urban form provides a capital that will never be levelled, not by technology, and above all it continues to retain efficacy in locating economy.

5 Situated economy; the case of Elandsgracht.

To explore the issue of location a bit further, a case study is conducted. The study took place in Elandsgracht, a street of about 500 meters long located slightly to the west to Amsterdam's historical core, and its subsidiary streets. More than a vibrant shopping street, Elandsgracht is the centre of life in Jordaan, a neighbourhood built during the large expansion of Amsterdam in the early of 17th century. Its teeming sidewalks, small merchants and local cafes packed by local inhabitants exchanging gossip, simply remind visitors to Elandsgracht to Jacob's passionate description of Hudson street in the sixties (Jacob, 1961). Just like Hudson street finally surrendered to change, transformation is innate to Elandsgracht. Impoverishment that once characterized Elandsgracht until the beginning of 1900's was slowly replaced by a more flamboyant character particularly after a group of young low-middle income population and students made invasion to the area. Today, the metropolitanising Amsterdam and soaring demand for high-quality shopping and housing has been subsequently compelling the conversion of Elandsgracht into middle-upper class neighbourhood.

Despite this series of transformations Elandsgracht has gained a unique and particularly strong character, a local identity, which is rarely found in contemporary urban place. Its identity is lent among other by the abundance of 'artsy' businesses located there. Part of the reason is the relatively low price of property the neighbourhood enjoyed up to the late seventies which had encouraged a group of young artists and entrepreneurs to set up their ateliers and shops there, which most, although remain small, are still in business until today. Although the increase of property-price has been putting extra pressure in the neighbourhood for the last couple of years which results outflow of businesses transformation of small functions to houses, a new wave of inflow has partly fended this off. Prevailing images from the past of its bohemian culture and street life have been certainly giving extra spur to this new wave, without necessarily making them easier to stay in business. As brought to fore in the interviews, one of the secret why firms from older generation still survive is that they had purchased their shops when they were relatively cheap while others have to pay much higher rents. Another reason is that years of practice allow mature firms to build network of customers and established a rather sophisticated niche market.

The data used in this study were collected through field observation and in-depth interviews. The field observation was conducted for two weeks, starting daily from 7am to 10pm, and aimed to give overall picture of urban dynamics in the site and vicinity. The survey is started by mapping all kinds of (visible) street level activities and functions in the area, including registering the differences in business hours in different functions and the changing pattern of visitors in various times of day and week. The gathered information is then put together in a map containing layers, which serves as a basis map for the next step. The result is shown in Fig 4.

After finishing the field observation, interviews are taken with the customers, shop-owners, employees and some of their customers in order to gain data concerning spatial practices that they carry out as individual and in relation to the businesses. Questions concerning their (and their employees) daily spatial practices are collected together with those from their customers. This includes information related to spatial (economic) practices, including e.g. origin and destination (of people and goods), frequency and volume of flows (contacts and purchases) diverging and converging from and to each activity in Elandsgracht. The result is once again plotted in map, showing the information like the

flows and connection between different sites by using graphical means. Shown in Fig. 4b, for example, is the economic network of local supermarket. We can see from the map that its customers (red lines) are mostly local, its workers (orange lines) come daily from different parts of the city (most coming by bike and public transport from the west Amsterdam) and the goods (blue lines), monitored through realtime technology, are delivered not least than 18 times/week from distribution centre in a neighbouring city.

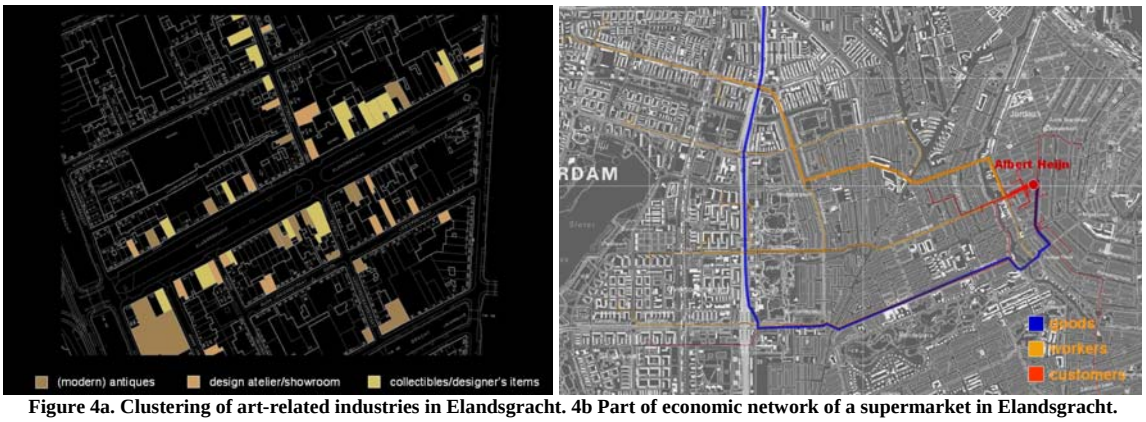

Figure 4a. Clustering of art-related industries in Elandsgracht. 4b Part of economic network of a supermarket in Elandsgracht.

6 Agencies and locational cruxemics; analyzing the process of location

As the readers might notice already, there is an obvious pattern of clustering of art-related businesses in Elandsgracht shown in Fig. 4a. This interests me in particular since clustering is generally seen as evidence of the effect of proximity in classical location theory. According to some, proximity is closely tied to economic performance. Although friction of distance has been downsized in the operative of today economy, thanks to technology indeed, we cannot deny that geographical closeness brings positive effects to economy. However, the concrete reasons behind clustering remain obscure. Among the reasons popularly mentioned are the effect of geographical proximity in knowledge spillover (e.g. Marshall, 1929), which seems especially convincing in the case of skill and creativity intensive economy, and functional complementarities (e.g. painter, frame maker and gallery owner).

The result of in-depth interviews in Elandsgracht shows, however, that there are rarely examples supporting that line of reasoning. There are only feeble evidences of functional complementarities (e.g. a bookstore and a publisher that belong to a same owner) or concrete effect of proximity. An artist who runs an atelier in one of those streets, for example, displays and sells her works at a gallery located 100 km away instead of in the gallery cross over the street. The result of the interviews does not suggest that being physically close to other artists result in positive effect or increasing possibility to work collaboratively on a regular basis, although most of them admit to have such collaboration with other artists living kilometers away without having distance as an issue. The effect of proximity is also quite weak in the case of antique shops. There is little evidence to support the idea that clustering helps increasing sales. That shops located in cluster benefit from bigger attraction (scale-effect) can be hardly seen in Elandsgracht as each shop focuses on highly specific segment of market, a group of serious collectors having interest in very special items, which makes no reason for them to share customers. A positive yet minor effect of proximity we found is perhaps the effect of clustering in attracting window shoppers. But again, mostly done only by less serious collectors, his type of shopping contributes very little to the sales. Locational vicinity also contributes little in enhancing better communication between of shops and having cost-saving effect. The shops,

although regularly exchange collections with each other, mostly prefer to do this in auction rather than by crossing over the street to visit and see what their competitors have in collections.

What I am suggesting from the result of this small experiment is not that economic activities in Elandsgracht operate rather solitarily due to the nature of their businesses, but that the interlinks between similar economic activities are *off-site* rather than *in-site*. As shown in above examples, the connectives involve in most cases external, large, agencies like exhibitions, musea, or auctions which are critical to mediate communication and transaction. Without being supplemented by those agencies, the effect of physical proximity alone in nurturing communications and transactions is minimal. That economy, even to the smallest scale, is inseparably linked to distant off-site connections rather than locally bounded, or to borrow the term used by Amin & Thrift (2002) 'distanciated economy' puts definitely new emphasis on the effort to understand the geography of contemporary urban economy.

Furthermore, the study shows that linkages occurred at street-level scale are lesser related to proximity of similar types of economy but more to the mingling of various activities, or what using the term coined here, cruxemics or crossemics to emphasis on its heterogeneities. Fig. 4c, depicting movement made by individual customer on the site, shows that local interconnectivities are less related to the fact of geographical closeness of similar types of activities, but those related to the crossings of what seemingly unrelated activities. For example, a visitor to a gallery combines his weekly visit with doing some shopping and going for lunch in a local café. At this point, it might be particularly helpful to recast the issue through what von Uexküll (cited from Thrift, 2005) calls 'ecology'. According to von Uexküll, there are rather a series of 'spaces-for' instead of one single space in which everything is situated. Using this notion, we can try to imagine site as being conducive to wide range of economic activities that each operates in particular space. The space of an antique shop is not the same space where a café is located although they both share a same site. But this does not mean that different spaces-for in a site do not relate, as operatively they may be attuned to one another. For example, the café might rely for its business on certain local rhythms, from the lunchtime habits of workers to simply catering the needs for social gatherings., a term coined to refer the ecology of non-similar rather than similar activities. The mix character of in-situ economy has again underlined the urgency of relational thinking (Amin & Graham, 1999), which imposes on the way that we need to refocus our inquiry on the interconnectivity between different economies instead of taking each activity or a group of similar activities individually.

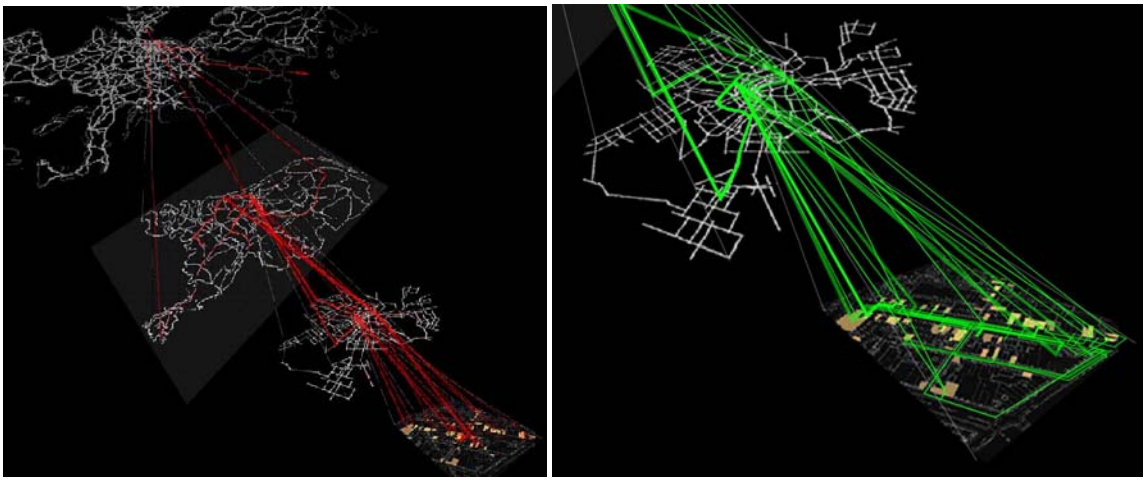

Figure 4c. Off-site interconnectives between similar economy compared to those between cross-activities in-situ

Despite its limitation and crudeness, this explorative study yields two important propositions, which need to be studied further. First, the correlation between the way visibility is distributed in space and the distribution of customers coming to shops in Amsterdam highlights the function of 'dead'

material of urban form as interlocutor for economy, repudiating the traditional position that saw material city simply as effect of processes. This does not imply, though, that by doing scrutinize analysis on form or whatsoever we can pin down exactly where economy is to be located –I do not have appetite to develop a deterministic account here. Instead, what I am suggesting is that we need to put more active stance towards the role space in situating economy in addition to the (more advanced) studies on the way economy creates and re-creates new space-time. Second, it draws our attention to the symbiotic character of economy which is slightly different to what had suggested in 'agglomerative economy'. Even in the modest example economy poses a rich and complex network forged through intractable numbers of connections, in-site and off-site. These two propositions are no more than an attempt to reopen new interests and give a nudge for future directions of study. For that reason, I would like to close this paper by suggesting a model which I hope will provide new insights and more progressive results in the near future.

7 Place-region network; a direction for future study?

Trying to mould a spatial model to allow us recasting the question of location using the concept of situatedness, I drew a hypothetical diagram which I intend to test out in my further study. Following Casey (1996), the diagram (Fig. 5) modeled 'site' or empty-space as constructed by series of region-place networks impinged by economic operatives at different scales and effects. The 'place' as we understand here is not a passive surface but being implicated within the spatial and economic network. My favorite example to explain the place-network model due its 'thickness' of places is the Amsterdam's Beursplein. The site, being home for most of Amsterdam's financial firms, is directly linked to Paris and Brussels in global/regional circuits (e.g. by EURONEXT network but also by high-speed train networks running to these cities), while it is connected to Amsterdam West and Jordaan by the urban network of slightly lower scale, i.e. middle-scale (e.g. tram/metro lines, but also by economy of particular scale like shopping malls) and to the streets adjacent to it (e.g. café accross the street, corner shop). Beursplein is not necessarily the same place from the perspective of someone sitting in Paris' stock exchange and someone sitting in a café crossover the stock-exchange, depending on his or her immediate needs, orientation, and performance. Economic functions of various types operating at different urban scales, from global to local, may eventually share the same site without sitting in the same place-region. For example, a financial firm and a café might locate themselves side by side in Beursplein, but still the firm and the café do not operate on the same space, nor do they share the same time (spatially and economically). In other words, their 'situatedness' in that particular site is constructed as result of two different circuits of region-place network which somehow are converged together in a particular site.

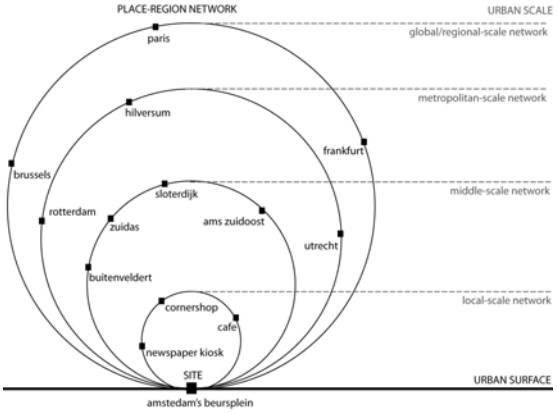

Figure 5. The layering of place-region network in the example of Amsterdam's Beursplein

In the previous paragraph I have demonstrated briefly that the region-place network model provides us with a theoretical model to probe the mechanism through which urban (economic) functions have become situated in different places –although in the first impression they might appear to be simply sitting next to each other. Taking a step further, the model allows us to recast the issue of location from an ecological perspective. The model allows us to reopen the rich ecology of urban economic for consideration. The notion of 'ecology' implies not only the complex interplay between different economies, but also the production of multiple (economic) spaces-times that somehow converge together in a particular site. Subsequently taking this vantage point we are able to capture the circuits cutting across between what commonly seen as two or more discontinuous economies or different set of activities, which brings important implication of study.

Firstly, this will direct our intention to understand the effect of meshing different scales of urban network in the way that heterogeneity of scales and trajectories brought by each individual activity and their complex interrelationship have become stabilizing factor of economy; it keeps economy to be in place. The mesh of networks and the way site is connected to different networks are beyond logistic purpose, but they conduit supporting conditions for different economies to be situated in place. In the case of Elandsgracht mentioned before, being located together allowing not only certain effects of cruxemics at work, but also an ecology. As result, the different activities in the street appear to us not as collection of unrelated activities, but an fully entangled 'body' as suggested in Fig 4b. Bearing in mind that heterogeneity is central aspect of stable network (Law, 1992) –as the more diverse and complex elements interrelated together, the more stable the network will become because each element is kept in place a number of elements and disconnecting single actor means that many connections have to be untied– the heterogeneity of activities in street plays crucial role in keeping viability and sustainability of city and urban economy more than concentration or specialization in particular activity (Jacobs, 1969).

Boden & Molotch (1994) propose that copresence communication of people is 'thick' with details. They argue that the meanings of copresence interactions depend on the way particulars which may seem insignificant on their own, when arrayed together in context, inform or 'index' each other creating rich communicative pattern. The thickness of Elandsgracht , considering the heterogeneities of activities found in the street, is partly explained by the way the street made visible to various group of people. For tourists, the street is just beyond the limit of their visibility-field (in fact their spread is limited to the east side of the street), which do not apply for those from other groups (see Fig. 2a). Not only affirms the proposition made earlier that site acquires meaning by the way visibility is distributed in the network, this suggests that the mesh of different scales of urban network has a place-generating effect and play crucial role in creating supporting conditions for economy. In this way urban networks become constructive or generative: it creates 'place' by situating different activities together in a system of ecology. This ecology, more than anything else, is hold together by the material form of city and its role in stabilising and coordinating of spatial practices, including economic practices and social practices carrying supportive function to economy.

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